

- **Boiler Modification:**

A comprehensive study was performed by the manufacturer of the boilers (Babcock & Wilcox). This study reviewed all aspects of boiler operation at the new turbine output levels. The study also included evaluation of current technologies and operating practices for minimizing emissions, without the need to replace burners. The study recommended addition of surface area specific to primary superheat section. IPSC proposes to add 24 rows of superheat tubes across the full back-pass (convective section) of each boiler. This modification will help eliminate transient temperature anomalies and provide stable and efficient operation at the new higher rating.

Since the facility already has low-NO<sub>x</sub> burners, to stay below significant net increases in NO<sub>x</sub> minor adjustments will be done (such as how coal is combusted, i.e., biased firing, burners-in-service re-arrangement, adjustments of the burner excess air, adjustments of the frequency of soot-blowing, etc) to the boiler combustion process.

- **Circulating Water Makeup Modifications:**

A new circulating water makeup design will support increased makeup requirements and add a degree of redundancy to the system.

#### **Modification Affecting Emissions**

- **Increase Fuel Flow (Heat Input):**

In order to utilize the increased capacity, coal combustion will increase approximately 5.9%.

- **Scrubber Wall Ring:**

Patented wall rings will be installed in all twelve (12) scrubber absorber vessels to move flow back to the center of the vessel, preventing slip, and providing more efficient SO<sub>2</sub> and acid gas capture in the flue gas.

- **PRODUCTION SUMMARY:**

The proposed project will increase generation capacity from 875 to approximately 950 MWhe, with steam flow design increasing from 6.6 to 6.9 million pounds per hour. Design heat input will increase from 8,500 to 9,225 million Btu per hour, requiring an increase from 5.3 to 5.6 million tons of coal (based on the current coal quality) each year. There will be no NO<sub>x</sub> emission increase due to a better, more stable, and more efficient combustion process, adding of superheater tubes for the elimination of transient temperature anomalies, and to provide stable and efficient operation at the new higher rating. Therefore, hourly emission limit for NO<sub>x</sub> is decreased in proportion with fuel input increase.

- **Group I Dust Collectors Limit**